

TRANSPORTATION & CIRCULATION CHAPTER



This was the first chapter prepared for the Master Plan, even before the formation of the Master Plan Committee. This chapter was prepared by the Montachusett Regional Planning Commission (MRPC) through a District Local Technical Assistance (DLTA) grant in December 2010.

TRANSPORTATION/ CIRCULATION ELEMENT CHAPTER

1. Introduction

This element of the Master Plan discusses Transportation/ Circulation in Westminster, including private automobiles, public transportation, bicycling, and pedestrian modes of travel. The ability to move people and goods is essential to the economic vitality and quality of life in the region. The existing conditions of the roadway system are reviewed by looking at such data as traffic counts and crash incidents. Proposals and recommendations will then be made taking into consideration other interrelated issues such as open space for an interconnected bicycle and pathway system within the Town and connections to other adjoining towns and the region.

2. Role of the Regional Planning Agency

The Montachusett Regional Planning Commission (MRPC) acts as staff to the Montachusett Metropolitan Planning Organization (MPO) that has the responsibility of prioritizing transportation projects within the Montachusett Region. This presents local municipalities with greater chances for input in setting local priorities. This shift in priority setting is intended to give local municipalities a stronger role in planning transportation improvements that directly affect them. It is important to note that transportation projects and plans must be included in a regional transportation plan in order to receive federal funding for implementation.

Regional Transportation Plan

The Regional Transportation Plan (RTP) outlines the transportation priority needs and policies for the region. Before projects receive federal funding, they must be identified and incorporated into the policy goals and visions of the Regional Transportation Plan. The RTP is developed through studies, discussions with local officials, boards and commissions and public comment. Each Metropolitan Planning Organization in the Commonwealth of Massachusetts develops a RTP to provide guidance to local and state officials in deciding how to spend federal and state transportation funds. The RTP for the Montachusett Region identifies both short and long range projects for local roads, highways, bridges, rail, transit, bike and pedestrian trails, freight and airports as well as priorities, goals, visions and strategies.

The existing Regional Transportation Plan prepared by the Montachusett Regional Planning Commission was endorsed in March 28, 2007. That Regional Transportation Plan is currently being updated and MRPC anticipates that it will be endorsed in March 2011. It should be noted that after the plan is completed and endorsed, the Montachusett MPO can still incorporate any changes through an amendment to the RTP. Now is the time for people to offer ideas and identify problems and priorities. Information on the development of the RTP can be found on the MRPC website at www.mrpc.org.

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Transportation Improvement Plan

The Transportation Improvement Program (TIP) is a federally required, annually updated, prioritized listing of short-range highway construction and transit projects proposed for implementation during a four federal fiscal year cycle. It is a means of allocating scarce federal and state monetary resources across the state to projects that each region deems to be its highest priorities. The TIP must be financially constrained to projections of available federal aid. The Massachusetts Department of Transportation (MassDOT) Highway Division, moreover, is committed to funding those projects that will be ready for advertisement in Federal Fiscal Year (FFY) 2011 and beyond. To this end the regional TIP contains a financial plan showing the revenue source or sources, current or proposed, for each project, for each anticipated FFY of advertisement.

To receive Federal or State funding, a transportation project must be included in the TIP. Projects listed in the TIP must also conform to the State Implementation Plan (SIP) for Air Quality Conformity in accordance with the Clean Air Act Amendments (CAAA), giving special consideration to "regionally significant" projects. Transportation projects funded with Federal funds from other Federal agencies or with local or private resources should be identified in the document to reflect the integrated and intermodal nature of the metropolitan transportation planning process.

The TIP must also be consistent with the current Regional Transportation Plan for the Montachusett Region. In addition the TIP estimates future funding sources for operating and maintaining the current transportation network as well as the costs of capital improvements. The agency responsible for implementing highway projects in the TIP, unless otherwise noted, is the MassDOT Highway Division and, for transit projects, the Franklin County or Montachusett Regional Transit Authorities.

The Montachusett TIP is the product of a comprehensive, continuing and cooperative effort (the 3C Process) to improve the regional transportation system by local officials, the Montachusett Joint Transportation Committee (MJTC), the Montachusett Regional Transit Authority (MART), the Montachusett Regional Planning Commission (MRPC), and the MassDOT. Together these organizations along with local officials comprise the signatories representing the Montachusett Metropolitan Planning Organization.

Project Development Summary

Project Development is the process that takes a transportation improvement from concept through construction.

Every year the Montachusett region receives federal and state funds for projects to improve the transportation network in local communities. These funds and projects are prioritized through the Montachusett Metropolitan Planning Organization, a regional advisory group that annually develops the Montachusett Transportation Improvement Program (TIP).

For a community to receive funds, the project must follow a multi-step review and approval process required by the Massachusetts Department of Transportation (MassDOT) Highway Division. This process is summarized in the figure on the following page.

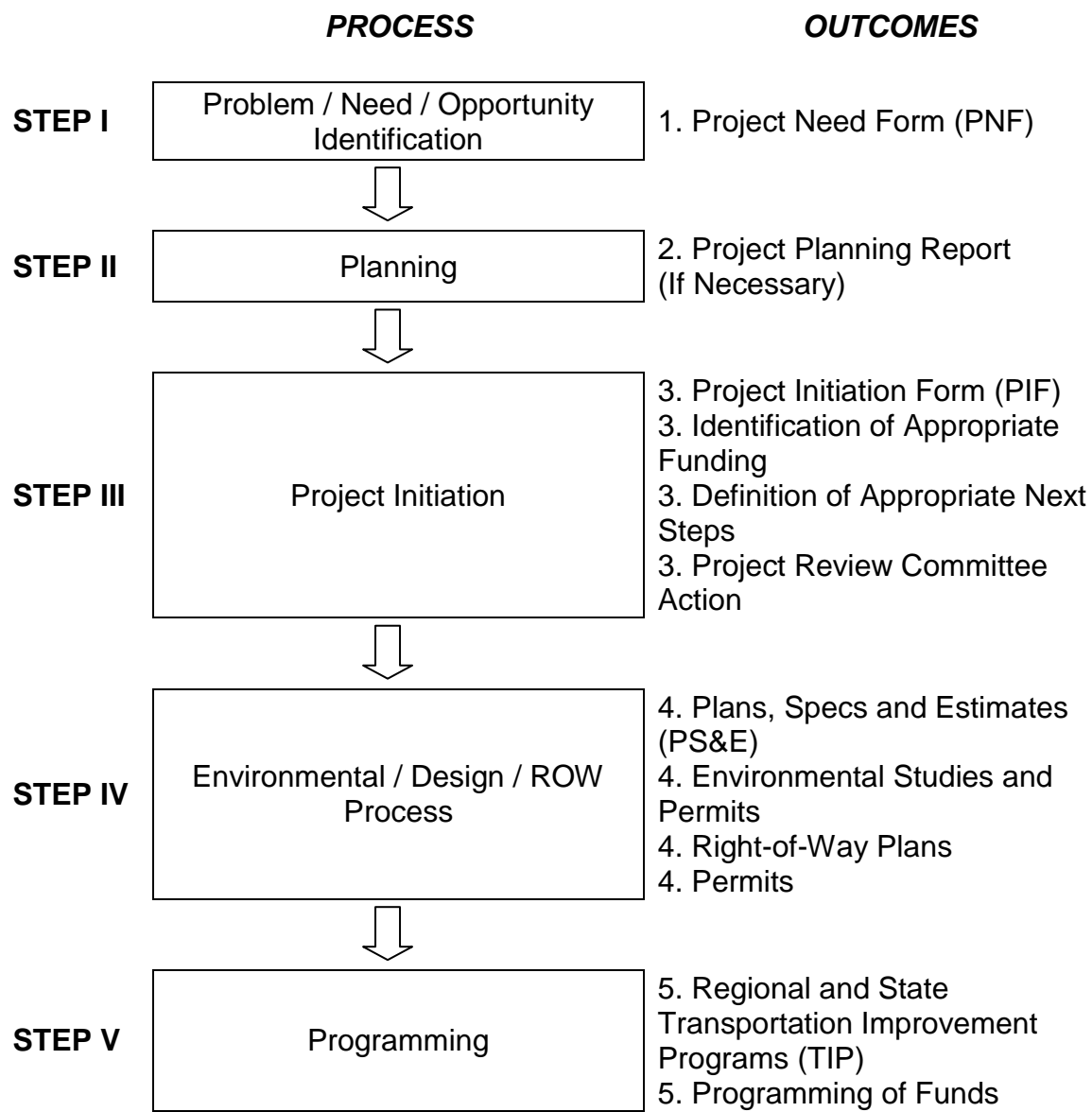
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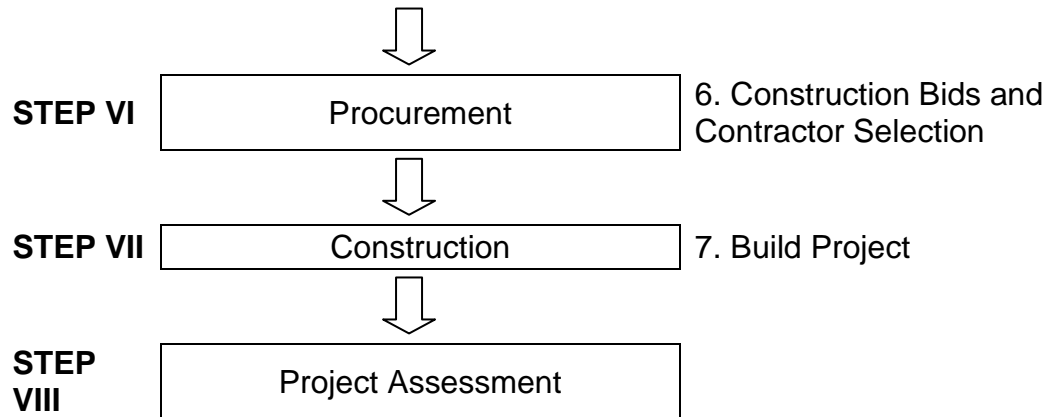
Project proponents are required to follow this process whenever MassDOT Highway Division is involved in the decision-making process. The project development procedures are, therefore, applicable to any of the following situations:

- When MassDOT is the proponent; or
- When MassDOT is responsible for project funding (state or federal-aid projects); or
- When MassDOT controls the infrastructure (projects on state highways).

Projects with local jurisdiction and local funding sources are not required to go through this review process unless the project is located on the National Highway or Federal-Aid Systems.

Project Development Process





Source: MassDOT Highway Division

The project development process is designed to progressively narrow the projects focus in order to develop a project to addresses identified needs at that location. There should be opportunities for public participation throughout.

The eight steps in the above figure are described in detail in Chapter 2, Project Development Guide of the **MassDOT Highway Division Design Guidebook** (<http://www.mhd.state.ma.us/default.asp?pgid=content/designGuide&sid=about>).

Summary

In summary, to get a project constructed, a community should:

1. Meet with the District Office of the MassDOT Highway Division to review and discuss the potential project. The District office can provide the community with information and feedback about the possible project's scope, cost, issues, etc.
2. Submit a Project Need Form (PNF), along with any support materials, on the potential project to the District office.
3. After review and feedback from MassDOT Highway Division on the PNF, a Project Initiation Form (PIF), again with any supporting materials, is prepared and submitted to the District office.
4. MassDOT and the Project Review Committee (PRC) act upon the PIF. If the project is approved by the PRC, the community is notified and, if applicable, initiates the design process for the project.
5. The municipality hires a design consultant and also begins work on the right of way plans as well as any permits, local approvals, etc.
6. During this phase the project is incorporated into the regional Transportation Improvement Program (TIP). Placement and prioritization of the project is based upon available funds, evaluation criteria scoring, design status and public support and comments.

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7. Design public hearing is held at the 25% design phase.
8. Design progresses to 100% and all plans, specifications and estimates (PS&E) are completed. Project is then ready for advertisement by MassDOT.

3. Journey to Work

The “existing” commuter pattern of Westminster residents is based on the 2000 Census Bureau’s Journey-to-Work information. While this information is already 10 years old and changes in the economic climate and demographics of the work place have experienced change, the information provides a good baseline for which new information can be added. As applicable 2010 U.S. Census information becomes available, an updated community profile will be available, and a time-series comparison can be made.

In 2000, 3,493 people within the town had a job. Of these workers, 87.6% commuted to work by driving alone in their car, 7.2% carpooled, 0.7% used public transportation, 0.8% walked to work, 3.5% worked at home, and the remaining 0.2% commuted by other modes of travel. This is very typical of a suburban community like Westminster where busy schedules and scattered destination points prevail. There is little incentive to carpool.

Table 1 below summarizes the major workplaces for Westminster residents and the major places of work within the Montachusett Region and beyond. According to the U.S. Census 2000, out of all 3,425 workers in the Town of Westminster, 18.92% (648) work in Westminster. A significant portion of Westminster’s population worked in the Montachusett Region’s largest commercial centers; 15.21% (521) in Fitchburg, 12.32% (422) in Leominster, and 9.61% (329) in Gardner.

Travel to Worcester accounted for 7.91% (271) of the town’s working population and just 2.83% (97) worked in Boston. When compared to the Montachusett Region as a whole, it is not surprising that the easterly situated communities within the Montachusett Region generally had the largest percentage of residents traveling to Boston for work with Harvard (6.78%), Groton (5.14%), and Shirley (4.31%) having the largest percentages.

Table 1 – Residence to Workplace

Residence to Workplace Flows for Westminster and Montachusett Region 2000													
Residence		Workplace											
Community	# of Workers	Hometown		Gardner		Fitchburg		Leominster		Worcester		Boston	
		Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent
Westminster	3,493	648	18.92%	329	9.61%	521	15.21%	422	12.32%	271	7.91%	97	2.83%
Region Totals	106,051	29,802	28.10%	7,503	7.07%	13,285	12.53%	14,211	13.40%	6,300	5.94%	2,045	1.93%

Source: U.S. Census 2000

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As indicated in Table 2 on the following page, the mean travel time to work for Westminster residents was 28.7 minutes, slightly lower than the Montachusett Region average of 29.1 minutes but higher than Massachusetts (27.0) and the national average of 25.5 minutes. According to the 2000 U.S. Census, around 64% of Westminster's residents got to work in less than half an hour (3.5% worked at home – up from 3% in 1990), close to 25% took up to one hour and approximately 11% took greater than one hour (up from approximately 7% in 1990).

**Table 2 – Travel to Work
Mean Travel Time to Work**

Community	Minutes
Westminster	28.7
Montachusett Region	29.1
Massachusetts	27.0
U.S.	25.5

Source: US Census 2000

From a regional perspective, Townsend (36.4 minutes), Hubbardston (35.5), and Royalston (35.1) all had times over 35 minutes while Fitchburg (23.2 minutes), Clinton (24.0), Gardner (24.1), and Athol (24.6) all had average travel times below 25 minutes.

Of notable interest, the mean travel time to work by total means of transportation increased in every community in the Montachusett Region from 1990 to 2000 and Westminster was no exception with an increase of 4.7 minutes or 19.6%. This could be attributed, at least in part, to the dramatic increase in real estate prices during that time, widening the gap between income and purchase price. Historically, the average house price in Central Massachusetts where Westminster is located has been lower than state averages so that housing stock remained relatively affordable. This, along with the town's scenic beauty and attractive quality of life, brought homebuyers who were willing to travel greater distances to work. However, this trend may have reversed itself over the last few years with the decline of real estate values, higher energy costs, and the current economic recession.

4. Roadway System

Existing Network



State Route 2, or the Old Mohawk Trail, is the most important roadway to the Town and the region, running east west through the entire region. This limited access roadway provides the area with a direct link to Boston and to the western half of the state. Route 2 connects Westminster to all of the region's major urban communities including Fitchburg, Leominster, and Gardner.

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The completion of I-190 in the early 1980's provided good access from Westminster to Worcester, I-290 and the Massachusetts Turnpike. A second new limited access roadway was added to the town and the regions highway network with the completion of the Route 140 Bypass in Westminster and Gardner providing better access to Winchendon and other destinations to the north. Route 2A is another east-west roadway that runs parallel to Route 2 through much of the Montachusett Region. Additionally, Route 31 is located in a small portion of Westminster that runs north-south in the southeastern portion of town.

Functional Classification

Functional classification identifies a roadway's purpose and use as part of the highway network. The highway network consists of a hierarchy of streets and highways designed to channel traffic from location to location in a safe and efficient manner. In urban areas, streets and highways are classified into four functional highway systems: Principal Arterials, Minor Arterials, Collector Streets and Local Streets. **Table 3** graphically depicts the current Westminster roadway classification system. Westminster can compete for limited federal aid funding to repair their Federal-Aid eligible roads listed below through the annual TIP process. **A Roadway Classification Map** can be located in the rear of this chapter. Roads classified as "local" are not eligible for Federal-Aid and are maintained solely by the municipalities. Local roads are eligible for State Highway funds under Chapter 90.

Highways and roads are grouped into classes according to the type of service they are intended to provide. Classification is divided into principal arterials, minor arterials, major collector roads, minor collector roads, and local roads and streets. The chart below indicates the classification of some of the major roadways within Westminster.

Table 3 – Roadway Classification

<u>Roadway</u>	<u>Functional Classification</u>
Route 2	Principal Arterial
Route 2A	Minor Arterial
Route 12	Minor Arterial
Route 140	Minor Arterial
Route 31	Major Collector
South Ashburnham Road	Minor Collector
Oakmont Ave/Bacon Street	Minor Collector
West Main Street	Minor Collector
South Street	Minor Collector
Minott Road	Minor Collector
Others	Local Roads and Streets

Principal Arterials: The principal arterials are multi-lane roadways that connect major activity centers. These arterials carry the highest volumes of traffic at high speeds and are often entirely or partially controlled-access facilities with interchanges or grade separations at major crossings. Principal arterials not only carry a major portion of trips entering and leaving a community; they also carry a significant amount of traffic passing through the community.

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Principal arterials generally carry the highest traffic volumes. In Massachusetts, traffic volumes on principal arterials usually exceed 25,000 vehicles per day. Because the function of principal arterials is mostly to provide mobility at a high level of service, service to abutting land is of secondary importance. Parking along principal arterials is usually forbidden or discouraged; driveway access onto principal arterials is also discouraged. In Westminster, just one road fits the principal arterial classification: Route 2. Principal Arterials are eligible for Federal Aid.

Minor Arterials: Minor arterials feed into principal arterials and serve the dual function of carrying high traffic volumes and providing access to adjacent land uses. Minor arterials place more emphasis on land access; on-street parking is generally permitted but is heavily regulated in order to maximize the street's traffic-carrying capacity during peak travel periods. Minor arterials generally have four travel lanes during peak travel periods (on-street parking may occupy one or more lanes during non-peak hours), but a minor arterial may also have two travel lanes and widen out at signalized intersections. Minor arterials generally carry traffic volumes in the range of 10,000-40,000 average daily trips (ADT). Minor arterials serve as a distribution network to geographic areas smaller than the principal arterials. Trip lengths associated with minor arterials are of a moderate length and travel is at a lower speed than on principal arterials. In Westminster, three roads fit the minor arterial classification: Route 2A, Route 12, and Route 140. Minor Arterials are eligible for Federal Aid.

Collector Streets: Collector streets collect traffic from local streets and channel it into the arterial street system. The focus of collectors is more on land access than on mobility. Collector streets provide traffic circulation within neighborhoods and commercial and industrial areas. Travel speeds are generally lower and parking restrictions fewer than on minor arterial streets. Collectors are usually two-lane roadways with minor widening at intersections with arterial streets. Collectors carry traffic volumes in the range of 3,000 to 20,000 ADT. The higher flows are associated with collectors that are over two miles in length and where some element of through traffic between arterials is present. In Westminster, Route 31 is classified as a Major Collector and Oakmont Ave/Bacon Street, West Main Street, South Street, and Minott Road are classified as Minor Collectors. Major Collector roads are eligible for Federal Aid and Minor Collectors may also be eligible in some cases.

Local Road and Streets: The local streets include all the remaining streets that are not included in one of the higher systems. Local streets could be residential or industrial in character or could be access roads to recreation areas or parks. Traffic volumes on local streets are generally 4,000 ADT or less. A great majority of residential streets have volumes of 500 ADT or less. The high volume local streets are very long residential roadways (over one mile in length) with access to subdivisions.



Local roads' and streets' main function is to provide access to land. Travel speeds on local streets are generally the lowest and parking restrictions generally do not apply. Through travel on residential streets is often discouraged through traffic calming mechanisms. Although local streets carry relatively low traffic volumes overall, they constitute by far the greatest road mileage, accounting for 65% to 80% of roadway mileage in a typical community. Local roads and streets are NOT eligible for Federal Aid, but they are eligible for State Highway funds under Chapter 90.

5. Average Daily Traffic (ADT)



For many years MRPC and MassDOT have taken traffic counts at numerous locations in Westminster, as part of its regional traffic count program. Table 4 lists the traffic counts taken along major routes over the past 10 years by location. The counts consist of data collected during a period of at least 24 weekday hours. To reflect seasonal differences in traffic volumes, MassDOT produces seasonal adjustment factors based on data collected at more than 200 statewide locations where traffic volume data is collected 356 days of the year. The season adjustment factors are then applied to the 24 hour count volume to produce an Average Annual Daily Traffic (AADT) volume for the location.

These factors were applied to all counts listed in the table on the following page with the exception of counts listed on Route 2. The counts on Route 2 are permanent count stations and collect data continuously throughout the year.

A **Map of Traffic Count Locations in the year 2009** for Westminster can be found in the rear of this chapter. If the Town of Westminster is interested in having traffic counts conducted for certain street(s) or intersection(s), the Board of Selectmen should forward a written request to MRPC's Transportation Department.

6. Roadway Safety

Traffic accidents are often unpredictable, unavoidable events. Most traffic accidents are the result of driver error; however, driver error can be magnified by poor roadway or intersection design, or by inadequate traffic control measures. When crashes occur in high numbers at a particular location, there is probably a common reason for the accidents related to the design and/or signage of the road. These accidents can be predictable and the conditions that increase the chances for accidents are often correctable. Detailed study of accident records can identify these high-accident locations and lead to design improvements that will reduce the numbers and severity of future accidents.

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Table 4 – Westminster Traffic Volumes

Westminster Traffic Volumes												
Street/Route	Location	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Fitchburg Road (Rt. 31)	At Princeton T.L.					2,400				2,400		
Hagar Park (Rt. 140)	Btwn. Mile Hill Rd & Honeybee Ln.										5,200	
Hagar Park (Rt. 140)	S. of State Road (Rt. 2A)						7,300				7,100	
Main Street (Rt. 2A)	W. of Bacon Street				11,000				12,000			
Main Street (Rt. 2A/140)	W. of Worcester Road (Rt. 140)						10,900				11,500	
Route 2	E. of Route 140	39,362	40,923	42,663	42,168	43,257	42,991					
Route 2	Btwn. Exits 24 & 25					44,400						
Route 2	Over Route 140								35,900			
State Road East (Rt. 2A)	E. of South Ashburnham Road		7,800				7,500					
State Road East (Rt. 2A)	W. of South Ashburnham Road											7,600
State Road East (Rt. 2A)	N. of East Main Street				9,300		9,400					
State Road East (Rt. 2A)	E. of Bartherick Road									9,600		
State Road East (Rt. 2A)	W. of Bartherick Road									6200		
West Main Street (Rt. 140)	E. of Simplex Drive											15,800
West Main Street (Rt. 140)	N. of Main Street (Rt. 2A)		3,700				4,200				4,200	
Worcester Road (Rt. 140)	At Princeton T.L.							4,700			4500	

From this available data, a few findings can be made:

- Traffic along Route 2 gradually increased from 2000-2004 and then begins to drop in 2005. This could be a direct result of the recession and higher energy costs.... the cost of driving more than likely kept some people at home and pushed others toward public transportation.
- Most of the traffic counts for Westminster have stayed consistent within the past 10 years with the exception of a few locations where the count volumes have decreased slightly. This slight decline is seen throughout the Montachusett Region over the past 5 years.

MassDOT obtains crash data from the Massachusetts Registry of Motor Vehicles (RMV) to create crash tables for each community in Massachusetts for use in traffic engineering studies, safety planning activities, and distribution to government agencies and the public. The MRPC Transportation Department has been developing a crash database for the purpose of gathering crash statistics on the Region using historical and the most recent MassDOT crash tables available that currently exist from 2002-2008. To develop crash statistics from the database, MRPC staff has analyzed information such as number of crashes, crash location, and crash severity. Crash severity states the types of harm or the most serious outcome of a crash. There are essentially three possible outcomes:

1. Fatal Injury crash: Is the worst type of harm that involves at least one fatality or death of a person.
2. Non-fatal Injury crash: Is the second worst type of harm that involves at least one injury to a person.
3. Property Damage Only (PDO) crash: Is the third worst type of harm that involves damage to property of any type.

Crash Statistics

The Region saw a total of 12,605 crashes occur between the years of 2002 – 2008 and 480 of those crashes occurred in Westminster. Of these crashes 3 (1%) were fatal injury crashes, 147 (31%) were non-fatal injury crashes, 304 (63%) were property damage only crashes and 26 (5%) were unknown/not reported. A map depicting crash data locations for Westminster can be found in the rear of this chapter.

In 2008 the MRPC completed a Phase I Roadway Safety Conditions report which listed the most dangerous intersections and interchanges in the region, based on data from 2002-2005. This data is based off the Equivalent Property Damage Only (EPDO) crash severity rating system. EPDO rates a crash based on crash severity that gives one (1) point to a Property Damage Only (PDO) crash; five (5) points for a crash involving at least one Non-fatal Injury; and ten (10) points to a crash that involves at least one Fatal Injury. In other words, one Fatal Injury crash equals two Non-fatal Injury crashes and ten Property Damage Only crashes.

After determining each crash EPDO rate, the ratings of the crashes for each location are totaled. A high EPDO total indicates a dangerous location where crashes have the most severe consequences.

In this report Westminster had the following locations mentioned:

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City/Town	Community Rank	Region Rank	Intersections and Interchanges	EPDO Total	Total Crashes	Comments
Westminster	1	9	Rte. 2/140 (Exit 25)/State Rd. East (Rte 2A)/Hagar Park Rd.	180	70	Needs study
Westminster	2	13	Rte. 2 (Exit 24)/W Main St. (Rte. 140)	163	82	Improvements completed, needs follow up
Westminster	3	22	Rte. 2 (Exit 27)/Depot Rd./Narrows Rd. (also in Fitchburg)	96	40	Needs study
Westminster	4	83	W Main St. (Rte. 140)/Simplex Dr. (opposite Exit 24 ramp)	48	20	Improvements completed, needs follow up
Westminster	5	101	Rte. 2 (Exit 26)/Village Inn Rd.	42	18	Needs study
Westminster	6	105	State Rd. East (Rte. 2A)/Depot Rd./Bartherick Rd.	40	16	Study completed, improvements recommended

Route 140 Safety Improvement Task Force: The Rte. 140 Safety Improvement Task Force was created in the fall of 2008 to address various roadway concerns along Rte. 140 from Rte. 2 in Westminster in the North to Interstate 190 in the town of Sterling to the South. The Task Force is comprised of town officials and residents from the communities of Westminster, Princeton and Sterling as well as the two Regional Planning Agencies representing the towns along the corridor (Montachusett Regional Planning Commission and Central Massachusetts Regional Planning Commission) and the Massachusetts Department of Transportation (MassDOT).

The purpose of the Task Force was to address issues involving the corridor and advise the Regional Planning Agencies on their analysis of the roadway and development of a Corridor Profile for the roadway. A Corridor Profile is a compilation of various transportation data and analysis assembled to identify physical and operational characteristics in a roadway and provide recommendations for improvements. This final document will be presented to the town of Westminster in the fall of 2010.

Route 140 North Corridor Study: In addition, on June 17, 2010, the City of Gardner and the Towns of Westminster and Winchendon submitted a joint request for District Local Technical Assistance (DLTA) service from the MRPC. The request was for the following: Assistance with Preparation of a Corridor Analysis along State Route 140 between State Route 2 in Westminster and State Route 12 in Winchendon.

On June 29, 2010, the MRPC awarded the request for services. This study will evaluate congestion, capacity and safety in the short, medium and long term along Route 140 between Route 2 in Westminster and Route 12 in Winchendon. The short term evaluation will be based on existing data and studies. Because of the large amount of undeveloped land in the study area, the medium and long term evaluations will project traffic volumes and flows looking at one or more build out scenarios.

It should be noted that MRPC elected to award only land use related work on this project under this DLTA program - MRPC has incorporated the transportation related tasks in the proposal within its Unified Planning Work Program (UPWP) for October 1, 2010 to September 30, 2011. The UPWP for the Montachusett Metropolitan Planning Organization (MPO) is a financial programming tool

developed annually as part of the federally certified transportation planning process. This document contains task descriptions of the transportation planning program of the MPO, with associated budget information and funding sources for the 2010-2011 program year.

The purpose of the UPWP is to ensure a comprehensive, cooperative, and continuing (3C) transportation planning process in the Leominster-Fitchburg Urbanized Area and the Montachusett Region. Because of the scope and nature of the DLTA request, MRPC felt transportation related tasks would be appropriate for the MRPC to undertake within the confines of the UPWP.

7. Pavement Condition

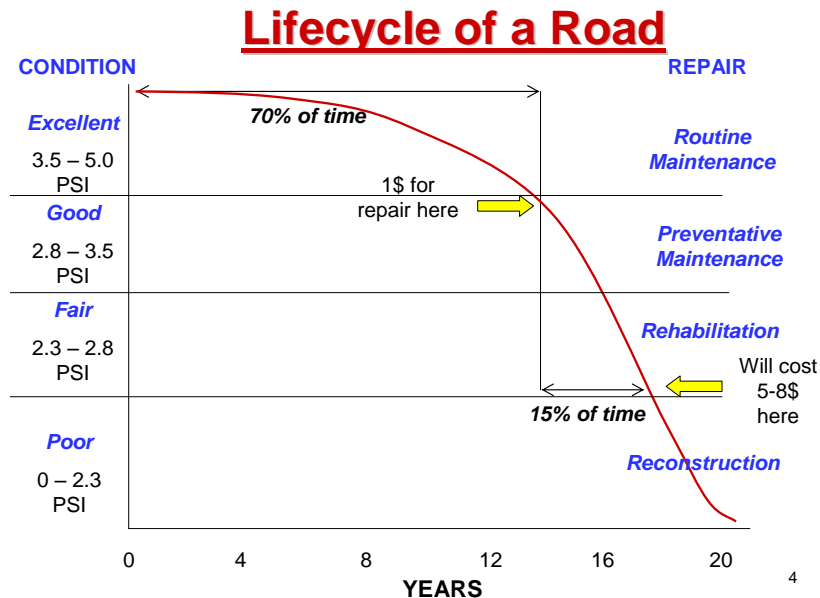
Pavements are the single largest capital investment in any roadway system. MRPC in cooperation with MassDOT maintains pavement condition data on all Federal Aid eligible miles of roadway in the Montachusett region in what is known as a Pavement Management System (PMS). The Montachusett Pavement Management System is a tool used to provide an ongoing inventory of pavement conditions along this network in the region. The **Pavement Conditions Map** can be found in the rear of this chapter.

The most recent data on the federal aid eligible network in Westminster was collected in 2009 along Rte. 140 from Rte. 2 south to the Princeton town line and on the whole of Rte. 31 by MassDOT using an Automatic Road Analyzer (ARAN). An ARAN is a vehicle mounted with various cameras, lasers and measuring instruments to determine a pavements overall condition. The condition is expressed by assigning a Pavement Serviceability Index (PSI) number from 0 to 5 to segments along the roadway. PSI is an overall rating of the pavements condition. See **Figure 1** below for details of the numerical values projected in the PSI.



Lifecycle of a Road also displays the concept of lifecycle cost. A pavements lifecycle is the time between reconstruction periods. Lifecycle cost is the total cost spent on maintenance and repairs for a particular pavement section during its life cycle. One of the main focuses of pavement management is to keep lifecycle cost low to stretch the dollar in what is commonly an ever decreasing maintenance budget.

Figure 1: Lifecycle of a Road



The tables below document the pavement conditions along the above mentioned sections of road surveyed by MassDOT, or the town jurisdiction (maintained) federal aid eligible numbered routes in Westminster. The overall condition of the road pavement determines the extent of repair that is needed to bring the pavements condition back to new, or “excellent”, condition. An estimate of square yards per repair strategy was used to determine the cost to repair these roadways.

Field visits by MRPC staff to survey pavement condition along these sections of Rte. 140 and Rte. 31 in Westminster have confirmed the accuracy of the PSI values collected by MassDOT in 2009 and remain relevant to the condition of the roadway at the time of this plan.

Table 5 – PSI Cost for Rte. 140 South of Rte. 2

Cost to Bring PSI up to "Excellent" Condition On Rte. 140 South of Rte. 2

Condition	PSI	Centerline Miles	Repair	Sq. Yards Cost	Sq. yards	Cost
Fair	2.3 - 2.8	1.00	Rehabilitation	\$18	39,600	\$712,800
Good	2.8 - 3.5	1.73	Preventative Maintenance	\$8.50	62,778	\$535,000
						\$1,247,800

Table 6 – PSI Cost for Rte. 31

Cost to Bring PSI up to "Excellent" Condition On Rte. 31

Condition	PSI	Centerline Miles	Repair	Sq. Yards Cost	Sq. yards	Cost
Fair	2.3 - 2.8	0.2	Rehabilitation	\$18	8,096	\$145,728
Good	2.8 - 3.5	1.58	Preventative Maintenance	\$8.50	63,958	\$543,646
						\$689,374

While it is important to preserve a pavements condition in good standing for as long as possible by implementing various preventative and routine maintenance techniques throughout its lifecycle to keep lifecycle cost low, it is a reality that budgets often do not allow for this. It is encouraged that a pavement management plan be implemented to keep track of maintenance needs and schedules to contribute to a cost effective approach to maintaining roadways.

8. Bridges

Throughout the Montachusett region, many of its roads travel over numerous brooks, rivers and water bodies. Within the 22 communities of the Montachusett planning area, some 317 bridges are identified and rated by MassDOT as part of their inventory system. MassDOT provided a Bridge Rating Table to the MRPC. This table includes the town where the bridge is located, the road name the bridge is located on, the bridge identification number, functional classification of the road, year built, historical significance, rebuilt date (if applicable), AASHTO (American Association of State Highway and Transportation Officials) rating, and the deficiency status of each bridge, i.e. structurally deficient or functionally obsolete.

According to the Massachusetts Department of Transportation **Project Development and Design Guidebook** (January 2006), structurally deficient is defined as “a bridge structure that has a defect requiring corrective action.” Functionally obsolete bridges are defined as “a bridge which has no structural deficiencies but does not meet standards to adequately serve current user demands.”

According to the 2007 Montachusett Region Transportation Plan, there are 58 bridges listed as functionally obsolete and 52 as structurally deficient. This represents approximately 35% (110 of 317) of the Region’s total bridges. Compared to the Commonwealth, 36% of the states bridges were identified as functionally obsolete or structurally deficient.

As of the year 2010 (based on the latest MassDOT bridge rating testing) there are no functionally obsolete bridges in Westminster but there are five structurally deficient bridges at the following locations:

- Whitmanville Road over Whitman River (owned by the Town).
- Route 12 Ashburnham Street over Phillips Brook (owned by the State, Bridge #W28017).
- Route 2 West Bound over W. Main Street (owned by the State).
- Route 2 East Bound over W. Main Street (owned by the State).
- Route 12 Ashburnham Street over Phillips Brook (owned by the State, Bridge #W28007, currently under construction as of November 8, 2010).

9. Culverts

As part of the Route 140 Safety Improvement Corridor Profile, issues related to flooding and the location and condition of several culverts along the roadway were raised. Locating these culverts and assessing their condition became a major point of emphasis within the study. The proper functioning of a culvert is important to the overall ability of a road to operate safely and effectively. Culverts are typically less than 20 feet in length and consequently are not part of the state’s bridge inspection program. Therefore, the town should work to identify, locate and evaluate any and all culverts within

the municipality and where appropriate seek to address any issues identified. The cost for maintenance and repair of these structures may lie, in most cases, with the town. In some instances, improvements to a culvert may be worked into a separate road or highway project but without a working knowledge of where they are located and how they function it becomes more problematic.

10. Public Transit System

MART Service

There is no fixed route bus service provided in Westminster. The Montachusett Area Regional Transit Authority (MART) organizes services that provide paratransit service for the elderly, disabled or disadvantaged population. MART contracts with social and human service agencies for paratransit service. The Town and MART provide service in Westminster through the Council on Aging that employs a paid coordinator funded jointly.

Intercity Bus Service

There is one intercity operator that travels through the Montachusett Region, Peter Pan Bus Lines that stops at Bickfords Family Restaurant at the junction of State Route 2 and Route 12 in Leominster. Peter Pan has one bus, which leaves daily from the Bickfords Family Restaurant and connects the cities of Leominster, Worcester, Boston, Springfield, Hartford, CT and New York City. The bus leaves the restaurant at 7:35 a.m. daily and return from Worcester at 5:45 p.m.; Traveling north leaving Bickfords Family Restaurant stop at 6:15 p.m. daily to Concord NH via the cities of Lowell, Nashua NH and Manchester NH.

Commuter Rail

Commuter rail service previously existed from Gardner to Boston. The trains passed through Westminster, but did not stop. The service to Gardner was drastically cut back late in 1983 and discontinued on January 1, 1987. Today, service along the Fitchburg line to North Station in Boston terminates at the Fitchburg Commuter Rail Station. However, there are planned improvements. The proposed Fitchburg Commuter Rail Extension—Wachusett Station and Layover Facility (the Project) is an expansion of passenger rail service approximately 4.5 miles west on the existing Fitchburg Commuter Rail Line. The Project consists of four distinct components:

1. Construction of a new passenger station (“Wachusett Station”) with parking facilities accessed via Authority Drive, an existing industrial park roadway in the City of Fitchburg;
2. Construction of a new layover facility on a current gravel pit within a proposed industrial business park in Westminster;
3. Upgrades to rail infrastructure along the existing railway corridor right-of-way (ROW) owned by Pan Am Southern west of the existing terminal Fitchburg Station; and,
4. A new station track within the existing railroad ROW to access the proposed station and layover facility while enabling existing freight service to continue unimpeded by passenger operations.

Planned improvements to the rail corridor will benefit both passenger rail service and freight operations by upgrading one of two main line tracks to passenger service standards. Construction of the new Wachusett Station for passenger service will also facilitate future freight access to the adjacent industrial park (known as the “231 Industrial Park” due to its location at the junction of State Routes 2 and 31) adjacent to the proposed station. Also the construction of the Layover Facility in Westminister will facilitate future freight access to the proposed industrial business park in Westminister. The Project allows for the smooth operations of both freight and commuter rail, with the freight company dispatching all service and the MBTA maintaining the shared signals and track.

11. Other Transportation Systems

Freight Railroads

There are three railroad companies currently operating freight lines in the Montachusett region:

1. Pan Am Railways, formerly Guilford Transportation Industries (GTI) is the largest operator of freight rail lines in the Montachusett region. It operates on a number of lines including those connecting the Moran Terminal in Charlestown to Mechanicville, New York. With the purchase of the B&M in 1983, GTI was handed control of the Springfield Terminal Railway (STR), a B&M subsidiary. In addition, GTI has controlling interest in both the Vermont and Massachusetts Railroad (V&M) and the Stony Brook Railroad (SBRR). The V&M and SBRR own one track each and they are leased to B&M. In Westminister, the Freight Main Line (Ex Fitchburg Route) is owned by the V&M with the freight operator being STR.

2. The Providence and Worcester Railroad Company (P&W) is an independent operator of freight lines. One line operates in the area from Gardner (providing a connection to the GTI system) to Hubbardston to Worcester.

3. CSX Transportation purchased Consolidated Rail Corporation (Conrail) in 1997. Conrail was previously established to acquire bankrupt railroad company lines. CSX operates one line running from Fitchburg to Clinton in the Montachusett Region.

Aviation

Within the Montachusett Region, there are three general aviation municipal airports, the Fitchburg Municipal Airport located in Fitchburg between Fitchburg and Leominster; the Gardner Airport in Templeton near the Gardner City Line; and the Sterling Airport in Sterling. Each of these is classified as a general aviation airport. The former Shirley Airport is no longer a public use facility. According to the Massachusetts Aeronautics Commission website (www.massaeronautics.org), “The owner/operator of Shirley Airport has decided to change the airport’s status from Privately-Owned/Public-use airport to Private Restricted Landing Area, which means that effective immediately, the airport is closed to public use. Pilots must receive prior permission from the owner/operator to use the airport.”

The largest of the municipal airports, by far, is the Fitchburg Municipal Airport. Approximately 515 flights per day are handled on its two-runway system. The airport handles the general aviation needs for the greater Fitchburg area and provides facilities for personal, corporate and air taxi services. Access to the Fitchburg Municipal Airport is through Falulah Road, which provides indirect access to Route 2 (via Hamilton Street and Routes 12 and 13), and downtown Fitchburg (via Bemis Road, Route 12 and Summer Street). Improvements to the existing highway network would benefit the airport. In addition, commuter rail service is available at the North Leominster Train Station on Route 13 approximately one mile from the airport.

12. Bicycles and Pedestrians

Bicycle Travel

There has been a noticeable increase in the number of bicycles around population centers and on the highways. Bicycles have found a place on the highway network by default, as have pedestrians. Bicycles mixed with motor vehicle traffic can be dangerous and create traffic delays. Safety problems have increased as evidenced by the number of bicycle-automobile accidents. It was reported in the MassDOT accident files for 1989, 1990, and 1991 that 161 bicycle-automobile accidents occurred in the Montachusett Region resulting in 153 injuries and one fatality.

There is a strong support from the regional communities for designated bikeways for recreational and commuting traffic. Individual bikeway projects are being implemented in some towns within the region. Construction of bikeways will encourage cycle commuting by providing a direct, separate, and safe route between communities. Also, increasing concern for air quality and energy conservation is leading to renewed interest in development of adequate facilities for bicycles throughout the Montachusett region.

Bikeways are special routes and/or facilities established to facilitate the movement of bicycles as an energy efficient transportation and/or recreation mode of travel. There are three types of bikeways: bike paths, bike lanes, and bike routes. These have been categorized as Class I, II and III bikeways respectively. Class I bike paths are routes totally separated from automobile or pedestrian traffic. Class II bike lanes are lanes at the edge of streets marked for exclusive use of bicyclists. Class III bike routes are roadways that bikes share with cars.

Legally, a bicycle has been recognized as a vehicle in Massachusetts since 1973, subject to basically all the rights and responsibilities of an automobile. Bikeways are public rights-of-way, maintained by a responsible state or local agency, just as a municipality's streets are owned and maintained. Where the land for a proposed bike path is privately owned, an easement to permit public passage may be obtained, or the right-of-way may be purchased outright. Bikeways which parallel roads may be located within the existing publicly owned right-of-way, extending beyond the roadway itself.

Pedestrian Access

Pedestrian activity is generally limited to small areas within Westminster Village. Some residential streets abutting the village don't even have sidewalks. A program to retrofit these areas closest to the center with sidewalks is proposed along with needed repairs to existing sidewalks. Such action

encourages walking instead of automobile use and can be an important component of the overall revitalization of the village. Sidewalks should be included in new roadway construction, roadway improvements, and residential and non-residential subdivision development. Along major arterial roadways, land should be secured for sidewalks or pathways as development occurs. Pedestrian actuated signals should be in place in densely populated areas where warranted to allow safer movement of pedestrians.

13. Recommendations

Circulation Goals and Objectives

Goal:

- Construct and maintain a safe road system that is consistent with the desired small village and rural character.

Objective:

- Maintain a roadway management plan to achieve maintenance oriented roadway network condition and provide a basis for establishing priorities and level of budget allocation.

Proposals and Recommendations

1. **Continue Proactive Town Participation with MRPC.** Decisions related to project development, prioritization, funding and scheduling are made through the metropolitan planning process and the MRPC serves as staff to the Metropolitan Planning Organization (MPO). Through continued and active involvement in the planning process via the MRPC, the Montachusett Joint Transportation Committee (MJTC) and the Montachusett MPO, issues and projects important to the town can be discussed, heard and acted upon with the town's input and knowledge. MRPC is working with towns interested in establishing bikeways in order to provide technical assistance in bikeway implementation. Therefore, Westminster should be more actively engaged in MRPC activities.

Responsible Entity: Westminster Board of Selectmen and Planning Board are each responsible for designating a MJTC Westminster Representative who should make every effort to attend monthly MJTC meetings and communicate with MRPC transportation staff.

2. **Schedule Traffic Counts with MRPC.** Each year the regional planning agency, MRPC, solicits from each community up to 5 traffic count locations per calendar year. Westminster has taken advantage of this program for the past few years. The Town should continue to work with the MRPC to establish key traffic count locations to go along with those locations that are part of the MRPC's regional traffic count program. The purpose is to monitor traffic patterns over time in order to anticipate the need for future improvements. Traffic counts are conducted by MRPC at no cost to the community.

Responsible Entity: Board of Selectmen is the responsible entity for forwarding traffic count requests to the MRPC. The BOS should solicit up to five potential locations for traffic counts from Town Boards and Departments (Department of Public Works, Police Department, Planning Board, etc.) on an annual basis.

3. **Promote Traffic Calming Efforts.** Traffic calming measures include a range of strategies to slow down traffic and deter the use of local residential roads for through traffic. Strategies might include one-way streets, neck-downs or narrow travel lanes, on-street parking, or speed humps. These strategies include ones that may be more effective than those currently employed by the town such as the development of cul-de-sacs and dead-end streets. Traffic calming must be conducted in a comprehensive manner—not piecemeal—otherwise traffic will simply shift from one local street to another. Currently the town is using signs in the school zone on South Street to draw attention to the pedestrian crossing areas as well as using temporary radar trailers to help with speeding. Enforcement measures should be identified and put in place before the local streets become inundated by through traffic. The Town can also require developers to implement traffic calming measures in new subdivisions.

Responsible Entity: Westminster Board of Selectmen with significant input from the Department of Public Works, Police Department, and Planning Board/Planning Department.

4. **Sidewalks.** Make the neighborhoods, especially the downtown, more pedestrian - friendly through the construction and rehabilitation of sidewalks. Current design standards for ADA compliance should be incorporated. This effort could, at least in part, be incorporated into a Comprehensive Circulation Study/Plan (See Recommendation #6). Financing for needed roadway and sidewalk repair for Westminster's existing local roads include Enhancement funds, public/private partnership projects, and Community Development Block Grant funds (in moderate-income neighborhoods) for potentially eligible areas.

Responsible Entity: Westminster Board of Selectmen with significant input from the Department of Public Works, Police Department, and Planning Board/Planning Department.

5. **Regional Trail Network.** Work with neighboring communities and regional entities to establish a regional trail network that would ultimately link Westminster to various recreational opportunities outside of the town (i.e. North Central Pathway in Gardner/Winchendon). Currently there are limited bike and pedestrian trails within the community. The town may wish to identify, prioritize and implement additional trail opportunities.

Responsible Entity: Westminster Board of Selectmen with significant input from the Conservation Commission, Open Space Committee, and Planning Board/Planning Department.

6. **Comprehensive Circulation Study/Plan.** The town may seek to establish a Comprehensive Circulation Study/Plan of non-motorized users that could identify major travel routes, crosswalks, sidewalks, appropriate pavement markings and signage, etc. This plan should include major areas of concern for the town (ie. downtown, town hall, library, post office, schools, etc) In addition, this plan could identify links to the towns overall trail/bike network.

The Town could communicate with MRPC Transportation Staff to investigate the possibility of conducting such a study under MRPC's Unified Planning Work Program (UPWP) at no cost to the community. The UPWP for the Montachusett Metropolitan Planning Organization (MPO) is a financial programming tool developed annually as part of the federally certified transportation planning process. This document contains task descriptions of the transportation planning program of the MPO, with associated budget information and funding sources for the program year. The purpose of the UPWP is to ensure a comprehensive, cooperative, and continuing (3C) transportation planning process in the Leominster-Fitchburg Urbanized Area and the Montachusett Region. Other funding options to supplement a project like this might include the Safe Routes to School Program - for more information, contact MassRIDES (www.commute.com).

To supplement and work in conjunction with a Comprehensive Circulation Study/Plan, Design Guidelines could be established – the guidelines would be for property owners planning exterior alterations, additions to or the rehabilitation of existing buildings and they would also apply to the design of new buildings. A potential funding source for Design Plans might include MRPC's District Local Technical Assistance Program which is funded by the Commonwealth. While funding for this program is currently available, future funding is not guaranteed.

Responsible Entity: Westminster Board of Selectmen in cooperation with the Planning Board/Department, Department of Public Works, and Police Department.

7. **Update Census Data.** Update relevant sections of the Transportation Element when 2010 Census is released.

Responsible Entity: Westminster Planning Department.

8. **Bridges.** Encourage the State to further investigate the structure, function, and scour ratings of key bridges in Westminster, and to make these bridges a funding priority.

Responsible Entity: Westminster Board of Selectmen should initiate discussion with the Massachusetts Department of Transportation (MassDOT) District 3 office and encourage involvement from the Westminster Department of Public Works.

9. **Culverts.** Conduct and maintain an inventory of culverts within the community and seek to identify a mechanism to clean, repair and update the structures as needed.

Responsible Entity: Westminster Department of Public Works.

10. **Strengthen Public Transportation.** At various public meetings, residents expressed interest in strengthening the Town's public transportation system. This would especially benefit the non-driving population—including the elderly, children, and the disabled. There needs to be more flexibility and options available to seniors, the low and moderate income, and all residents. A way to initiate some progress would be for the Westminster Board of Selectmen to open a dialogue with the Montachusett Area Regional Transit (MART). Discussion

between Westminster and MART could include relevant/current MART programs, and the possibility of having a commuter shuttle in Westminster through existing service between Fitchburg and Gardner. In the future, discussions could even include the possibility of a shuttle to Wachusett Station in West Fitchburg after its development.

Responsible Entity: Westminster Board of Selectmen would be the appropriate board to contact MART.

- 11. Analyze Traffic Crash Data.** Analyze traffic crash data for crashes on major roads and intersections to determine the patterns and causes. Seek potential projects to address identified issues at major crash locations. Where appropriate, state and federal funding assistance should be utilized. Work with your local regional planning agency (MRPC) as well as the Massachusetts Department of Transportation (MassDOT) highway division office on projects and funding opportunities.

Responsible Entity: Public Works Commissioners with input from Westminster's MJTC Representatives and Police Department.

- 12. Pavement Management System.** The Town needs to protect its investment in roads and other public facilities commensurate with its level of assets. Lack of routine maintenance investment results in needless deterioration and replacement resulting in reduced utility of the facility and greater long-term replacement costs. Where appropriate, the town should seek local and federal funding assistance on eligible roads. Work with your local regional planning agency (MRPC) as well as the Massachusetts Department of Transportation (MassDOT) highway division office on projects and funding opportunities.

Responsible Entity: Department of Public Works with input from Westminster's MJTC Representatives working with the Department of Public Works and Police Department.

- 13. Curb Cuts.** Numerous curb cuts in the downtown area increase the number of potential conflict points between pedestrians and vehicles as well as vehicles and vehicles. The town may consider conducting a review of existing curb cuts to determine if consolidation, removal, etc. may be appropriate – in fact, this could be included in the scope of work of a Comprehensive Circulation Study/Plan listed in Recommendation #6. The town could also review its Site Plan Review bylaw and, if warranted, include additional language that could limit curb cuts.

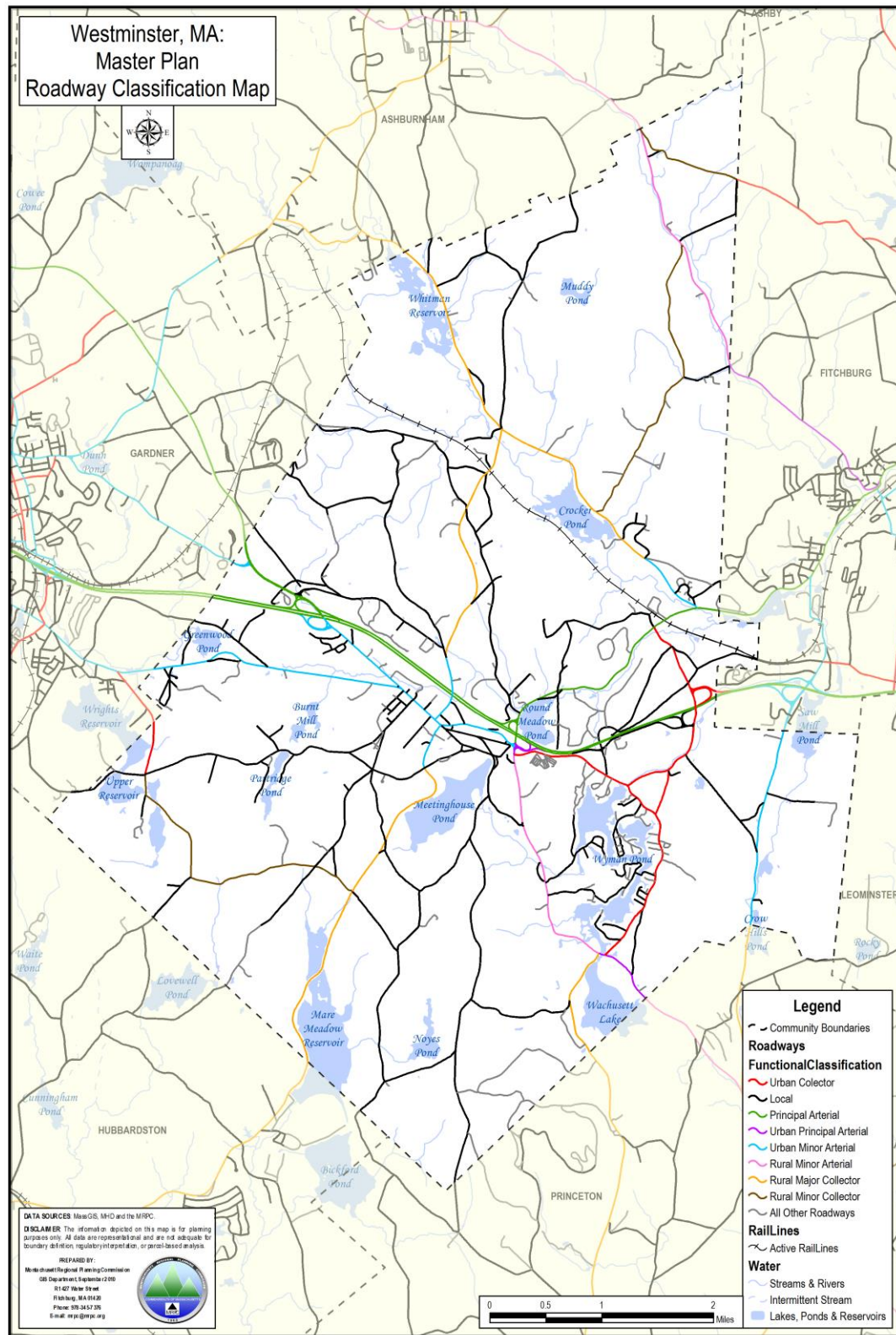
Responsible Entity: Planning Board/Planning Department and MassDOT.

- 14. Investigate Restarting a Regional Bus Service.** At the forums held for the Master Plan update process, citizens expressed an interest in restarting a regional commercial bus service much like the Montachusett Region had in the 1950s. This would involve the Town reaching out to private commercial bus companies to discuss what it would take to have a regional bus service include Westminster as a destination stop. It should be noted that there are a number of private commercial tour buses that already come through the Montachusett Region during the fall during foliage season and they frequently stop at Vincent's plaza to allow riders to have a rest stop and

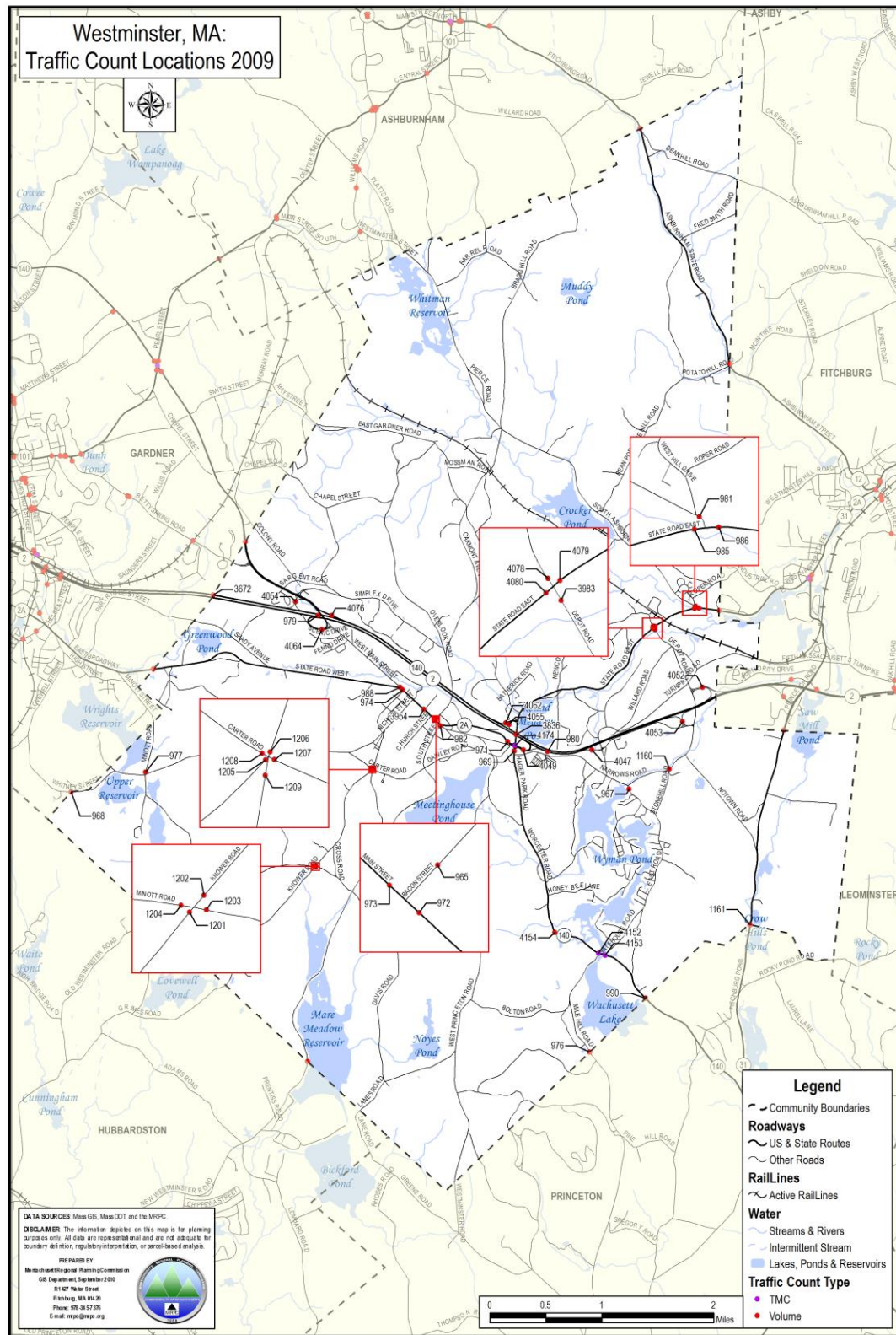
get something to eat. However, what is envisioned in this recommendation is restarting a more formal and regular regional bus route with Westminster's Town Center being one of its stops.

Responsible Entity: Westminster Board of Selectmen, Economic Development Committee and Town Planner.

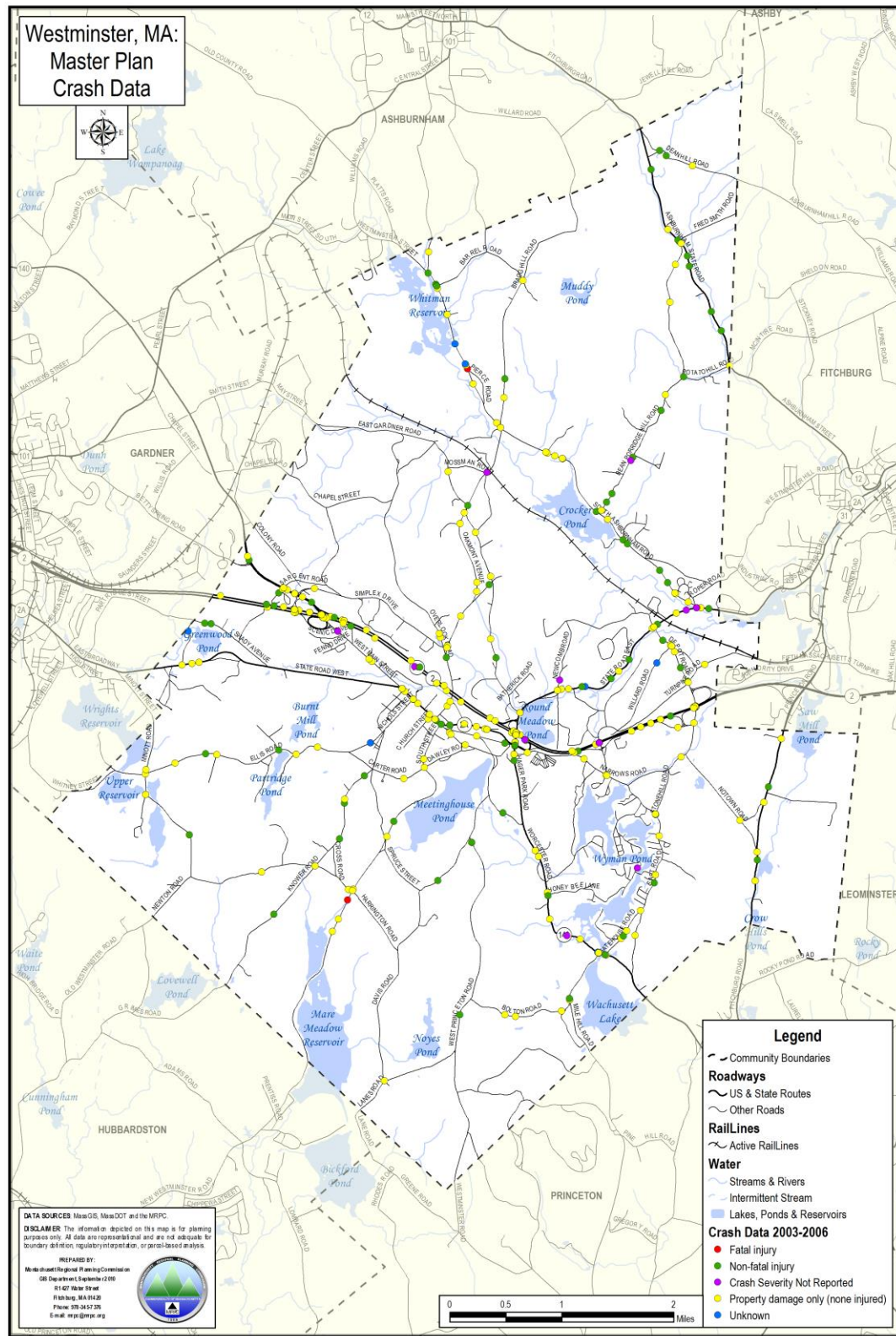
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